Vitamin D deficiency is a global health problem. The extent of vitamin D deficiency varies with latitude, season and sun exposure. Also the degree to which the body of religious or cultural reasons is covered, the skin color and, not least, dietary habits and the use of supplements has an impact on the vitamin D status. Women are more prone to develop vitamin D deficiency than men.

Vitamin D plays an important role in brain homeostasis, neurodevelopment, immunological modulation, aging, and also, importantly, in gene regulation [20,21]. It binds to more than 2700 genes and regulates the expression of more than 200 of them [22,23].

Research indicates a possible connection between vitamin D and a broad range of non-skeletal disorders, including dementia, autism, schizophrenia, depression, muscle pain, cardiovascular disease, diabetes, multiple sclerosis, cancer, and infections, and all-cause mortality [21,23-29].

Research has shown that vitamin D deficiency occurs in all parts of the world [2,9,10,30]. There is evidence that significant vitamin D deficiency (<25 nmol/L) is very common in all age groups in South Asia and the Middle East [31]. In a Canadian study it was found an average level of 24.6 nmol/L in female immigrants from the Middle East [32]. In a study from the United Arab Emirates had 84% of men and 89% of women vitamin D insufficiency in the winter period. In the same study had 30% of men and 46% of women vitamin D deficiency [33].

Gender was in a recent Jordanian study found significantly associated with vitamin D deficiency [30]. More females than males in the study had vitamin D deficiency. Other studies have also shown that women more often than men develop vitamin D deficiency [33-35]. Childbirthing women and men that have given birth to many children, as well as those who of religious or cultural reasons cover the whole or parts of the body when they go out, or are mostly staying inside, are particularly vulnerable to develop vitamin D deficiency [35].

References
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